

**IN THE CLAIMS:**

1 1-19. (CANCELLED)

1 20. (ORIGINAL) A computer readable medium containing executable program instruc-  
2 tions for use by an intermediate network device having a plurality of ports for receiving  
3 and forwarding network messages, the executable program instructions comprising pro-  
4 gram instructions for:

5       configuring one or more ports as access ports;

6       configuring one or more access ports as rapid forwarding ports;

7       identifying all ports that have been configured as access ports with rapid forward-  
8 ing; and

9       upon initialization of the device, placing each identified access port with rapid  
10 forwarding directly to a forwarding spanning tree port state, without transitioning such  
11 identified ports between any intermediary spanning tree port states, so that network mes-  
12 sages may be received and forwarded by such identified ports immediately.

1 21. (ORIGINAL) The computer readable medium of claim 20 comprising further pro-  
2 gram instructions for:

3       monitoring each of the one or more access ports configured with rapid forwarding  
4 for receipt of a configuration bridge protocol data unit (BPDU) message; and

5       in response to receiving a BPDU message at one of the access ports configured  
6 with rapid forwarding, placing the respective access port in a blocking spanning tree port  
7 state.

1    22. (ORIGINAL) The computer readable medium of claim 21 wherein  
2            the intermediate network device has a memory, and  
3            the configuration of ports as access ports with rapid forwarding is stored at the  
4    memory.

1    23. (ORIGINAL) The computer readable medium of claim 21 comprising further pro-  
2    gram instructions for placing one or more other ports in a listening spanning tree port  
3    state, upon initialization of the device.

1    24. (ORIGINAL) The computer readable medium of claim 20 wherein each access port  
2    configured with rapid forwarding is placed in the forwarding state prior to a link-up sig-  
3    nal being received at the respective port.

1    25. (ORIGINAL) The computer readable medium of claim 20 comprising further pro-  
2    gram instructions for generating and issuing one or more configuration bridge protocol  
3    data unit (BPDU) messages from each access port configured as rapid forwarding.

1    26. (ORIGINAL) The computer readable medium of claim 20 wherein an end station is  
2    not coupled to a selected one of the access ports configured with rapid forwarding until  
3    after the respective access port is placed in the forwarding spanning tree port state.

1    27. (ORIGINAL) The computer readable medium of claim 26 comprising further pro-  
2    gram instructions for generating and issuing one or more configuration bridge protocol  
3    data unit (BPDU) messages from each access port configured as rapid forwarding.

1 28. (PREVIOUSLY PRESENTED) A method comprising:  
2 configuring one or more ports of a network device as access ports;  
3 configuring one or more access ports to have a rapid forwarding designation;  
4 identifying the ports that have been configured as access ports with rapid forward-  
5 ing designation; and  
6 upon initialization of the network device, placing each identified access port with  
7 rapid forwarding designation directly into a forwarding spanning tree port state, without  
8 transitioning such identified ports between any intermediary spanning tree port states, to  
9 enable network messages to be received and forwarded by such identified ports immedi-  
10 ately.

1 29. (PREVIOUSLY PRESENTED) The method of claim 28 further comprising:  
2 monitoring each of the one or more access ports configured with rapid forwarding  
3 port designation for receipt of a configuration bridge protocol data unit (BPDU) message;  
4 and  
5 in response to receiving a BPDU message at one of the access ports configured  
6 with rapid forwarding designation, placing the respective access port in a blocking span-  
7 ning tree port state.

1 30. (PREVIOUSLY PRESENTED) The method of claim 28, wherein the step of config-  
2 uring one or more access ports further comprises:  
3 selecting with a management protocol, by a network administrator, the one or  
4 more access ports to have rapid forwarding designation.

1 31. (PREVIOUSLY PRESENTED) The method of claim 28 further comprising:  
2 transitioning one or more other access ports that do not have rapid forwarding

3 designation to a listening spanning tree port state, upon initialization of the device.

1 32. (PREVIOUSLY PRESENTED) The method of claim 28, wherein each access port  
2 configured with rapid forwarding designation is placed in the forwarding state prior to a  
3 link-up signal being received at the respective port.

1 33. (PREVIOUSLY PRESENTED) The method of claim 28 further comprising:  
2 issuing one or more configuration bridge protocol data unit (BPDU) messages  
3 from each access port configured to have rapid forwarding designation.

1 34. (PREVIOUSLY PRESENTED) An apparatus comprising:  
2 a port configuration entity operable to maintain configuration data that indicates  
3 one or more ports of the apparatus are access ports, and that one or more of the access  
4 ports have a rapid forwarding designation;  
5 an enhanced spanning tree entity operable to query the port configuration entity  
6 and to identify the ports that have been configured as access ports with rapid forwarding  
7 designation; and  
8 a state machine engine operable to place each identified access port with rapid  
9 forwarding designation directly into a forwarding spanning tree port state, without transi-  
10 tion of such identified ports between any intermediary spanning tree port states, to enable  
11 network messages to be received and forwarded by such identified ports immediately.

1 35. (PREVIOUSLY PRESENTED) The apparatus of claim 34 wherein the enhanced  
2 spanning tree entity is further operable to monitor each of the one or more access ports  
3 configured with rapid forwarding port designation for receipt of a configuration bridge  
4 protocol data unit (BPDU) message, and in response to receiving a BPDU message at one

5 of the access ports configured with rapid forwarding designation, to place the respective  
6 access port in a blocking spanning tree port state.

1 36. (PREVIOUSLY PRESENTED) The apparatus of claim 34 further comprising:  
2 a management protocol operable to permit a network administrator to select the  
3 one or more access ports to have rapid forwarding designation.

1 37. (PREVIOUSLY PRESENTED) The apparatus of claim 34 wherein the state machine  
2 engine is further operable to transition one or more other access ports that do not have  
3 rapid forwarding designation to a listening spanning tree port state, upon initialization of  
4 the device.

1 38. (PREVIOUSLY PRESENTED) The apparatus of claim 34 wherein the state machine  
2 engine is operable to place each identified access port with rapid forwarding designation  
3 into the forwarding spanning tree port state prior to a link-up signal being received at the  
4 respective port.

1 39. (PREVIOUSLY PRESENTED) The apparatus of claim 34 wherein the state machine  
2 engine is operable to place each identified access port with rapid forwarding designation  
3 into the forwarding spanning tree port state while the respective port is uncoupled from  
4 any end station.

1 40. (PREVIOUSLY PRESENTED) An apparatus comprising:  
2 means for configuring one or more ports of a network device as access ports;  
3 means for configuring one or more access ports to have a rapid forwarding design-  
4 nation;

5 means for identifying the ports that have been configured as access ports with  
6 rapid forwarding designation; and

7 means for placing each identified access port with rapid forwarding designation  
8 directly into a forwarding spanning tree port state upon initialization of the device, with-  
9 out transitioning such identified ports between any intermediary spanning tree port states,  
10 to enable network messages to be received and forwarded by such identified ports imme-  
11 diately.

1 41. (PREVIOUSLY PRESENTED) The method of claim 28, wherein an end station is  
2 not coupled to a selected one of the access ports configured with rapid forwarding desig-  
3 nation until after the respective access port is placed in the forwarding spanning tree port  
4 state.